



A longitudinal study of quality of life and functional status in total hip and total knee replacement patients

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KEYWORDS

Quality of life;
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Abstract Background: Primary total hip and primary total knee surgeries are commonly performed to improve patients' quality of life and functional status.

Aim: This longitudinal retrospective study ($N = 851$) examined self-reported quality of life and functional status over the preoperative and postoperative periods: 12 months prior to surgery, one month prior to surgery and 12 months following surgery.

Methods: A linear mixed effects model was used to analyze the changes in quality of life and functional status over the sampling period.

Results: Patients in the convenience sample reported improvements in quality of life and functional status utilizing the SF-12 and Oxford Hip and Oxford Knee, although differences were noted by procedure and gender. Total hip patients tended to demonstrate greater improvement than total knee patients and males reported higher levels of physical and mental quality of life as well as functional status when compared to females. Of particular note was that mental health scores were consistently lower in both total hip and total knee replacement patients across the perioperative period and up to one year postoperative.

Conclusion: This study identifies an opportunity for health care providers to proactively address the mental health of total hip and total knee replacement patients throughout their joint replacement trajectory.

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Editor's comment

In a world constrained by available resources the outcomes of surgery are central to measuring success. Total hip and knee arthroplasties are focused on improving patients' pain experience, their functional status and enhancing their quality of life. This important study adds to the growing body of evidence that demonstrates that although the outcomes of arthroplasty surgery vary between patients with different characteristics, there is a general improvement in both function and quality of life which makes the surgery worthwhile. Longitudinal research has the advantage of being able to provide a picture over time – taking a 'snapshot' at only one point in time is likely to be far less valuable. The longer term impact on mental health and well-being shown by this study is an important area for both further research and for practice development.

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Introduction

The two most prevalent primary joint replacement surgeries are total hip (THR) and total knee (TKR) replacements. In 2010–2011 these two surgeries accounted for 35,295 hospitalizations ([Canadian Institute for Health Information \(CIHI\), 2013](#)). Many patients experience lengthy preoperative waits. In the current study a wait was considered lengthy if it surpassed the recommended 26 weeks ([Wait Time Alliance, 2012](#)). The trend of a 13% increase in hospitalizations for total joint replacement surgeries in the past five years ([CIHI, 2013](#)) is expected to add to wait times.

Literature

Two primary clinical aims associated with joint replacement surgery are to decrease pain and to decrease disability ([Canadian Orthopaedic Foundation, 2010](#)). For the purposes of this study, quality of life (QOL) and functional status (FS) were the related health status markers that were evaluated. QOL, in this study, is defined as the physical and mental well-being of the individual. Because QOL is multidimensional ([Ferrans and Powers, 1992](#)) and dynamic ([Berra, 2003](#)) it can mean "different things to different people" as well as "different things to the same person over a disease trajectory" ([Sprangers and Schwartz, 1999](#), p. 1507). FS focuses on a balance between what the individual does and what the individual aspires to do ([Wang, 2004](#)). FS activities help the individual to achieve fundamental needs, roles and health. The domains of both QOL ([Goodridge et al., 2005](#)) and FS ([Patrick and Chiang, 2000](#)) are physical, psychological and social in nature.

Given the often lengthy wait time experience and the significance of QOL and FS to individuals'

well-being it is important to examine QOL and FS across the care trajectory for THR and TKR patients. During the wait for joint replacement surgery QOL and FS are impaired ([McHugh et al., 2008](#)). With respect to procedure, some researchers ([Choi et al., 2012](#); [de Beer et al., 2012](#)) report that THR patients have better FS postoperatively when compared to TKR patients. Health outcome differences by gender were also identified in the literature. In some studies, females tended to have less improvement in their QOL following THR surgery compared to males ([Quintana et al., 2009](#)). Others reported that females had more functional decline at the time of their TKR surgery but they gained FS at a faster rate and by 12 months postoperatively they had similar functional levels as males ([Liebs et al., 2011](#)).

In terms of comparative longitudinal research, several studies explored the preoperative and postoperative phases. [Ostendorf et al. \(2004\)](#) evaluated both FS and QOL outcomes using the Oxford Hip Score (OHS), 36-Item Medical Outcomes Short Form (SF-36), EuroQOL Health Status and the Western Ontario McMaster Universities Osteoarthritis Index (WOMAC) instruments when THR patients were placed on the waiting list, prior to surgery and three and 12 months postoperative. [Garbuz et al. \(2006\)](#) also studied THR patients' functional outcomes with the use of the WOMAC but only at the time of orthopedic consultation and one year following surgery. [De Beer et al. \(2012\)](#) focused on FS one year postoperatively utilizing the OHS and Oxford Knee Score (OKS) in THR and TKR patients respectively. This current study provides a more complete examination of QOL and FS during the preoperative and postoperative phases in both the THR and TKR populations. More importantly, this research addresses the scarcity of longitudinal inquiry providing insight into QOL and FS over time with consideration for procedure and gender.

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